

University News

MONDAY, NOVEMBER 6, 1989

Rs. 2.50



C. Narayana Reddy, Vice-Chancellor, Telugu University, speaking at the first convocation of the University. Members seated from R to L are Mr. N.T. Rama Rao, Chief Minister of Andhra Pradesh, Dr. Shanker Dayal Sharma, Vice-President of India, who delivered the convocation address, Shri Gummadi Venkateswara Rao and Shri Puranam Subrahmanya Sharma, recipients of Honorary Doctorate Degrees.

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GENERAL INFORMATION

1. The selection will be made on All India basis.
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10. Candidates in employment must get their applications duly forwarded.

**Prof. B.B. Sethi
DIRECTOR**

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THREE MYTHS OF INDIAN HIGHER EDUCATION

D.A. Ghanchi*

Introduction

Indian higher education is a virtual monolith, a huge conglomeration of institutions of all sizes and shapes, most of which have been established after the country attained independence in 1947. There are more than 180 statutory universities and university level institutions and about 6500 colleges in the system. The student population is around 4.0 million and the teachers number around 2,50,000.

Among the universities, a large majority is of the affiliating type, very few being unitary teaching bodies. A few innovative models are of a Single-Faculty, specialized university like the Agricultural University or the Technological & Engineering University, or the University of Medical & Health Sciences. The Open University is yet another but very recent, structural innovation in the system.

Colleges and similar institutions also vary in size, in facilities and in respect of the quality of their programmes, of management and of outlook. One of the significant innovations in institutional structures is the evolution of the autonomous model as found in institutes of management and technology and a few traditional colleges granted the autonomous status under the New Education Policy (1986).

The Indian higher education system was twice subjected to a comprehensive study after the country became independent; first in 1948 at the hands of the Radhakrishnan Commission, and again in 1964 at the hands of the Kothari Commission. A hurried look was also accorded to the system in the document 'Challenge of Education—a policy perspective' (1985) which provided a conceptual framework to shape the National Policy on Education and the Programme of Action on it in 1986.

As a result of such formal scrutinies, the nation could recognise the strong as well as weak points of the system that was originally a handiwork of the colonial masters whose aims were fundamentally different from those that we have now as a free country. The said inquiries led to the formulation of minimum national expectations from the system of higher education, namely,

- (1) An all-round development of the potential of the youth of the country through a challenging programme, both curricular and co-curricular;
- (2) Promotion of standards of excellence on the part of institutions as well as individuals, including students and teachers, in various branches of knowledge, scholarship, research and creativity;
- (3) Preservation and enrichment of the indigenous heritage of education, culture, sciences, humanities, and arts, and its diversification and reinforcement through the application of modern science and technology;
- (4) Development and dissemination of a vibrant climate of vigorous pursuit of knowledge in formal institutions and the

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community at large so as to build up a re-
currently learning society that should be
intellectually and morally equipped to meet
the challenge of the emerging Information
Age; and

- (5) Building up of a self-replenishing human
resource that must throw up bands of leaders
to provide leadership of a comparable world
standard in different spheres of life—sciences,
arts, humanities, academics, social studies,
technology, business, industry and public
affairs.

Assumptions

All these expectations were obviously premised
on certain assumptions found empirically accepted
elsewhere in the world. They were

- (1) Higher education must be a teleological pro-
cess with an elevating perception of the
future sufficiently challenging enough to
thrill the imagination of the youth of the
country to win their commitment to its reali-
sation at any cost;
- (2) Higher education must cause and also be a
consequence of interaction with the com-
munity through specific intellectual, social,
cultural and technological interface built in
the system itself.
- (3) Higher education must be an endeavour into
the realm of creativity and intellectual non-
conformity with a view to opening up of
new frontiers of awareness, knowledge,
search and innovation.

It is the presence of the environment satisfying
these three assumptions that would ensure the pre-
valence of a climate conducive to higher learning
which should be the product of all those efforts that
go to make the system of higher education work.

MYTHS OF THE INDIAN SYSTEM

What does the Indian system of higher education
look like in the context of the expectations of the
people from the system and the assumptions a nor-
mal system is based upon? The system, as narrated
earlier, has doubtlessly registered an exponential
growth in size, number and quantity unheard of in
the case of a similar system elsewhere in the world.

However, on a close observation, the system
reveals a pervasive mythical underlayer on which
rests the expensive exterior which does not always
betray the existence of the subtle sub-stratum. There
are three major myths of the system. They are

1. The Philosophical Myth
2. The Operational Myth
3. The Academic Myth

Let's examine these three myths in respect of

their range and effects on the system.

1. The Philosophical Myth

India's higher education system is based on a
sound philosophy of life in tune with the basic valu-
es of the ancient culture of the country on the one
hand and those of the modern science and technology
on the other.

Critique

One has to cast a quick, cursory look at the sys-
tem to realise the mythical nature of this philoso-
phical axiom. The structures found within the system,
the curricula for various degrees, the contents of
the subjects taught under different courses and the
very orientation of the system would belie the claims
of indigenouness or modernity, relevance or value-
relatedness supposedly built in the system.

In fact, the main burden of the song of various
inquiry commissions since 1948 has been that of the
glaring absence of a sound, workable philosophy at
roots of all our thinking regarding the policy on
higher education, the curricula, the teaching and
learning materials, the methods of teaching and
testing, the recruitment of personnel with specific
qualifications, the code of conduct for teachers,
administrators and students, the policy of funding
education, etc.

Ontologically the scenario of higher education
has shown a lack of proper perception of and con-
gruence with the realities of Indian life. The elitist
composition of the student and teacher population
and the urban, upper-middle-class orientation of the
climate and curricula of the system are but just two
evidences of the hiatus between real life and higher
education in the country.

Epistemologically too the system continues to
unload, to a very large extent, the information cargo
that is less relevant not only to the culture and ethos
of the country and its people, but also to the needs
of development and change in the context of
modern science, technology and social dynamics.
The system's claim to be 'higher' is belied by its
being just post-secondary-school in the contents and
quality of its agenda of curricula.

The axiological base of the system is equally weak
and poor. The advocacy of the liberal, humanistic,
cultural heritage of the country is as timid and
apologetic as that of the modern values of scientific
temper, technological work ethics, democratic world
citizenship, socialism, egalitarianism and secularism
is vociferous and articulate, but reluctant, and super-
ficial.

It is this philosophical confusion, whether deliberate or otherwise, that has impelled the policy makers, educational thinkers and practitioners, and students as well as their parents to adopt an adhoc attitude to their respective roles. As their willing acceptance of this philosophical tentativeness has suited their short term gains and convenience, they have developed a vested interest in its continuance despite calls to the contrary having been repeatedly given by various learned commissions, and latest by the New Education Policy (NEP) and the Programme of Action (POA) pronouncements.

2. The Operational Myth

India's higher education system and its various structures and sub-structures operate in such symphonic unison as to lead to maximum productivity on the part of every participant in the process and minimum loss or wastage on the part of the investment made in the system.

Critique

One wished this operational dream were a reality even in approximation, for a human enterprise like higher education involving the best talent in the form of teachers, researchers and administrators and the most promising potential in the form of the youth of the nation constituting just 4% of the effervescent age-group, cannot be conceived of as a wasteful and losing business.

Our statutory universities are governed by the laws of the state, whether passed by the state legislatures or parliament. In order that the Rule of Law might prevail in governing the affairs of the universities, numerous provisions like Statutes, Ordinances, Regulations and Rules have been made. However, two malignancies have crept into the system. They are politicisation based on competitive politics and commercialisation based on a personal profit motive. These have conspired to set at nought all norms of objective administration of the system. The damage being done to it takes various forms like non-academic considerations to open new universities and colleges and to take decisions to run them, sacking of 'undesirable' personnel at will, unprincipled compromise on issues of merit and quality, subversion of discipline and respect for law among the rank and file, and so on. There have been countless instances of a functioning anarchy strewn all over the country, and not unoften has the extreme

situation in many an institution been saved by judicial intervention.

3. The Academic Myth

In institutions of higher education in India the teachers teach and students learn in an academic climate that promotes excellence in all the scholastic pursuits whether of teaching or studying or research or extension or production of new knowledge.

Critique

In fact, this is what is modestly expected of higher education system in any society. The academic worth and justification of the system lie in the fructification of at least these modest expectations. An ideal system is supposed to play a more innovative, more aggressive and more revolutionary role in the affairs of the lives of individuals, communities and nations, particularly those of the third world countries, because the comprehensive 'educational' agenda of a university includes, besides the academic dimension, social, political, economic and cultural components too.

But the Indian scene has a different story to tell. Barring the unconventional experiments like the IITs, the IIMs, some national laboratories and a few centres of advance studies, the academic pursuit in our universities and colleges is marked by archaic courses, irrelevant curricula, anaemic syllabuses, uninviting instructional materials, unchallenging methods of teaching, unreliable procedures of evaluation and examination, a freezing and demotivating institutional climate, etc. Add to this catalogue of disincentives, physical constraints like poor plant facilities, overcrowded classrooms, uncertain schedules of terms and sessions, loss of manhours inherent in a working year of fewer than one hundred days marked by stoppage of work for any reason, maybe a political rally or a communal riot or a no-mood strike by students or the death of somebody or even a defeat in a cricket match, and what not.

Naturally, the product of Indian higher education turns out to be deficient in all those facets of his personality in which he, by right, should have been a paragon of excellence—his intellectual equipment, his cognitive abilities, his communication skills, his scholastic domain, his social relationships, his productivity, his moral orientation, and his overall image as a refined human being. The degree docu-

ment with which he leaves the portals of the university has unfortunately, in many cases, ceased to be a real, true and valued indicator of his accomplishments through exposure to higher education.

Why these Myths ?

It is not difficult to trace the reasons for the emergence and continuance of these myths in India's higher education system. They are the product of the psycho-moral conflict that the people of the country have been experiencing after gaining independence from the colonial rulers. Political freedom brought in its wake a tide in the level of expectations of the people on all fronts—economic, social, cultural, technological, and so on. There arose an irrepressible urge to not only equal the advanced nations of the world in their various accomplishments but also vie with them in the race to outstrip them. However, such outdoing race required a massive repertoire of psycho-moral qualities, techno-scientific expertise, and socio-political skills of an extra-ordinary high order not found in a socio-politico-cultural climate bequeathed by a colonial rule in a tradition bound, stagnant and fatalistic, fragmented society that India was in 1947 and which she continues to be in a large measure even after forty years of independence.

The safest and easiest defense mechanism out of such bifurcating conflict is to create a set of myths and live with them, for that provides a cushion against all shocks of frustration, helplessness and a sense of surrender to the inevitable. Therefore, we find ourselves reconciled, without much setback to our conscience, to such patent incompatibilities as a three-year degree course with less than two-year contents, autonomous institutions with fetters on their decision-making freedom, internal evaluation without any credibility for the award of a degree, and so on. Myths tend to make our academic life liveable by window dressing the unpleasant realities generated by the peculiar psycho-moral conflict.

Implications

Myths are no good for individuals as well as nations. They give a sense of false security, sham progress and fictitious well-being. Continued longer, and in case of India's higher education they have been with the system for more than four decades, they corrupt the moral fibre of the people, rob them of their inherent will to exert, to strive and to achieve,

and destroy their basic qualities of honesty, truthfulness and adventure.

Myths feed themselves on certain human weaknesses, and in turn they strengthen them, too. People turn into cynics, lose faith in themselves as well as in their missions, and begin to live like drift wood. They lose their identity and this amounts to their intellectual and moral death. No self-respecting nation should drift towards such an unedifying fate.

Higher education in a country has an affirmative role to play which it can play well only if it frees itself from myths and is its own true self. Let's see what we should do to rid our system of its myths and transform it into a genuine, strong and unified force to serve the cause of national development and change.

Demythification of Indian Higher Education

It is not in the interest of the health, vitality and social usefulness of India's higher education system to continue to be infected by these three myths. It is, therefore, imperative to work out a strategy to disinfect the system and make it an effective instrument of national reconstruction.

The process of demythification would involve three coordinated measures as described below.

(1) Moral Regeneration

The calculus of success in all human affairs, particularly in departures from firmly established practices, requires the existence of a strong and unequivocal will, supported by appropriate resources—physical, human and technological. Fortunately, India possesses a reasonably strong infrastructure of resources for higher education. We need to free ourselves from the crippling psycho-moral cleavage and accept our individual and national identities as they are. This does entail a ruthless self-analysis in the context of our assets and weaknesses on the one hand and an objective, clear perception of the future dispensation on the other.

Since independence we have groped in search of the new in spite of an overpowering but unavoidable gravitational pull of the old. This has led to a vertical schism in our psycho-moral self, in our ideology, in our scheme of priorities, and in our agenda of action. We have tried to toy with exotic ideas in the curricula,

to transplant outlandish structures in our system and to experiment with practices and techniques that demanded an altogether different frame of mind and work ethics from the feudal ways deeply ingrained in our stratified society. We must stop this futile exercise, and go in for a genuine, synthetical approach. Let's therefore, adopt a new moral stature to be honestly eclectic in our approach to higher education and undertake the rebuilding of the system without being apologetic for our heritage, our shortcomings and our inadequacies.

(2) *Clear Perception*

We need to perceive our needs as a nation with a rich cultural heritage but a poor politico-historical legacy on the one hand, and the challenging prospects of an unpredictable future in the global context on the other. Higher education has a special multifarious role—social, cultural, economic, political and technological—for our country. We need to articulate it in specific terms of goals and aims with a clear and loud emphasis on the social accountability of higher education.

This clarity of perception must pervade all our thinking pertaining to our decisions regarding policy formulation, curriculum construction and reconstruction, teacher training and renewal, organisational planning and management, etc.

(3) *Bold Strategy*

We need to evolve a participative strategy of implementing our plans and designs evolved as a result of a clear perception of the parameters of higher education. The guiding principles shall have to be quality, equity and excellence at all costs. This will require a built-in provision for a multi-tier mechanism for close observation, rigorous monitoring, objective evaluation, timely feedback and an impartial system of rewards, remediation and punishment.

The myths described earlier have made their way into the system and continued to spread because the strategy followed hitherto has left holes for the dead wood to accumulate as the system has entailed no risks for anyone. The proposed strategy must rest on the tripod of stake, accountability and initiative on the part of all the participants in the process of implementation. The POA (1986) has also advocated this type of approach towards the implementation tasks of the NEP (1986).

Conclusion

No dreams in the history of human civilization were ever realised either by individuals or by nations on the strength of myths. They require a realistic estimation of assets and aspirations, a moral courage to accept one's limitations and constraints, and a pragmatic world-view of one's powers and potentials. The time to do this exercise and rededicate ourselves to the task of shaping India's higher education is here and now. □



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Professional Competence of College Teachers

U.S. Chaudhari*

A University is not a community of 'Shamans', 'Swamis' and 'Gurus'. It has to make its judgements as objectively and rationally as possible. "A university" says Kingman Brewster Jr., past President of Yale University, "must glory in the privilege of doubt. Intellectual progress is made by finding fault with the last best thought you had. Argument is for the purpose of learning, not for the therapy of dogmatic assertion. Serenity is sought in the exhaustion of reason, rather than by turning off the hearing aid". We should recognize also that as knowledge does become more relevant to operational decisions, universities do have an increasing professional and clinical function, for the potential operator as well as for the scholar. A.N. Whitehead is, therefore, justified in his remark that it "preserves the connection between knowledge and zest for life, by uniting the young and the old in the imaginative consideration of learning". The university of today serves the mass instead of few, but its basic duty remains that of ennobling human beings.

A university is not a democracy but a republic and the professors are the aristocracy of this academic republic. A college (or a university) stands and falls by its professors. It is generally said that as the professors so is the college. They are the professors who really make or mar the image of a college. Therefore, they should carry themselves like professors with nobility, dignity and scholarship. Professors ought to be people put on perfection, bubbling with excitement over ideas. They should read, write and speak great thoughts. George Z F. Bereday asks them to "hitch their wagon to the highest stars". In essence, they need constant insistence on quality and excellence.

Higher education should involve an exposure to greatness. But there is no simple plan for attracting greatness to the teaching profession. There are not enough competent college and university teachers to fill most of the posts that have been created to meet the demands of higher education. Many of them are not well qualified, but quite apart their level of performance is pulled down by the large numbers they have

to teach. The working conditions are often poor and remunerations scanty. Edward Shils has remarked that in India, most of the teachers in institutions of higher education teach many hours weekly for very small salaries, and many of them supplement their professional income by writing notes for students or by scrambling for examinership. They have little time or motive for improving their knowledge and their manner of teaching. Lipset, from the findings of Shils and Kleiner, however, suggests that colleges, with better trained and devoted teachers, experience relatively few incidents of students' indiscipline.

Speculating about future of higher education, Alexander M. Mood has observed that the most colossal failure of higher education is its persistence in ignoring personal development to focus entirely on intellectual matters. In a world becoming more highly organized and consequently more dependent on social interaction, we must be ever more concerned about emotional maturity, personal development, and interpersonal skills. Persons without education of this kind will be unable to function effectively in a highly organized society which inevitably requires extensive interpersonal relations. In our country we have yet to see a trickle of educational efforts in this sphere of learning in the form of encounter groups, T-groups and Gestalt groups, as well as in the increased demand for psychiatry, psychological counselling and psychological therapy groups. Practically none of it occurs on campuses. People responsible for the professional amelioration of college and university teachers generally regard these endeavours as too frivolous for the great halls of learning.

It is said that quality of the citizens depends on the quality of education and the quality of education, in its turn, depends on the quality of teachers. Therefore, with poor quality of teachers it is doubtful for a nation to make significant contribution to the fund of knowledge and wisdom. It is an acknowledged fact that we have been at the receiving end of the pipe as for the modern knowledge is concerned. In this age of rapid change and resultant obsolescence, unless sincere efforts are made to update the knowledge and competence of teachers, we cannot think of setting

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'excellence' as an aim of university education. The Education Commission (1964-66) has rightly remarked :

"A sound programme of professional education of teachers is essential for the qualitative improvement of education. Investment in teacher education can yield very rich dividends because the financial resources required are small when measured against the resulting improvement in the education of millions".

For about fifteen years enrolment in higher education grew at the rate of 13-14% per year. In no country of the world did at any point of history the rate of expansion go beyond 5-6% per year. Unavoidably, therefore, we paid a heavy price in dilution of standards. Nothing else was so much responsible for low standards, says Amrik Singh, as the poor quality of teachers recruited into the system. The speed of the horseman cannot be faster than that of the horse. Hence, what the teachers impart to their students cannot obviously be better than what they are capable of. To improve their professional competence is, therefore, a matter of paramount importance. Though this is recognized, what is actually being done is woefully inadequate. The UGC budget funds for quantitative expansion in the fourth plan period were fully utilized but those meant for qualitative improvement, limited as they were, lapsed to the extent of 50%.

Teaching is a highly skilled profession and, therefore, training should be an essential requirement for the new entrants. A lecturer in a college or university is required to take up his full load of teaching from the first day of his appointment. He starts teaching without any orientation to the methods of teaching, either through a formal course or through the observation of teaching of some effective teachers. He or she simply imitates the ways of teaching of his or her teacher. The new entrant designs his lectures without giving a deeper insight into the purposeful organisation of his lecture. He lacks the proper understanding of the adolescents to whom he teaches. Neither he knows the psychology of adolescents nor the psychology of learning. He prepares question papers and assesses the answerbooks without receiving a scientific knowledge of evaluation techniques. He has no professional grounding to organize tutorials, seminars, discussions or workshops. There is no tradition, in our universities, where a junior consults his seniors on professional matters. Nor is there a tradition under which a departmental head imparts regularly phased guidance to the new entrants in the profession. Thus,

the enthusiastic recruit is left to himself, and all the competencies, in course of time, are acquired by him through trial and elimination of error. If he gets through this ordeal without being wrecked the credit goes to himself and not to the seniors or the system.

The Education Commission (1964-66) has emphasised the need for a training course for newly recruited university and college teachers. Even for the old and senior teachers, programmes of continuing education are desirable in view of the exploding knowledge and techniques in the area of education. Nearly one lakh journals in 60 languages double every 15 years.

Half of what a person learns is no longer valid when he reaches middle age. In future skills will obsolesce and facts will wear out at a more rapid rate. No one will ever 'complete' an education. In order to prevent professional decay and obsolescence, one must learn continuously and develop the 'knack of learning'. The National Policy on Education (1986) has, again, reiterated the need for professional and pedagogical preparation of college and university teachers. What John W. Gardner has said in another context is equally true for the teaching profession : "The society which scorns excellence in plumbing because plumbing is a humble activity, and tolerates shoddiness in philosophy because it is an exalted activity, will have neither good plumbing nor good philosophy. Neither its pipes nor its theories will hold water." □

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Self Evaluation System-cum-Delinking of Degrees from Jobs

S.B.S. Mishra* and P.K. Chatley*

The prevailing chaos in our society is mainly attributed to the lack of moral values amongst the members of the society. The present system of education has contributed in no less a measure to this state of affairs as it has miserably failed to inculcate in our students the values which were considered so sacred only a few decades ago. The modern trends are such as tend to achieve the ends even by questionable means. The recent phenomenon of large scale copying in the examinations is just a manifestation of these trends. Unless the teachers and the education planners of the country do something to halt and reverse these trends, we may all be accelerating our journey to the doomsday.

As regards the system of education, constant assessment and evaluation form an integral part of it. The mode of evaluation has either been purely external or purely internal or consisting of both the external and the internal components. Over the years, all the three have been tried with varied degrees of success. Whereas the external mode of evaluation is said to lead to inconsistent results, the internal system presupposes the impartiality and the integrity of the examiner, which cannot be taken for granted these days. The evaluation system should be such as to act as a motivation device for our students.

As one of the means to fulfil the aforesaid objective, a 'Self Evaluation System' has been experimented upon by one of the authors at Institute of Engineering and Technology, Lucknow, and is recommended for adoption by other educational institutions all over the country. The course CHM 103, a Chemistry course for B. Tech. students, was rigorously taught along with providing sufficient reading material and home assignments. The students were subjected to quiz tests at regular intervals. However, the evaluation of the answer scripts was not done by the instructor. The standard solutions to the questions in the question paper were passed on to the students and each student was asked to evaluate his/her own script. The score ranged from 30% to 70%. As expected, the ranks obtained by them in these tests

corresponded to their ranks in the Combined Entrance Examination through which these students had been admitted to the Institute.

The aforesaid exercise is a pointer to the fact that introduction of the 'Self Evaluation System' at other educational institutions as well is desirable. The sample experiment mentioned above negates the argument that the students if given freedom are very likely to misuse it. However, there may be exceptions. Accordingly, the degree or diploma obtained should not be recognised for getting a job. The job seeker should be required to appear in the National level tests like Civil Services Examinations, National Examinations conducted by UGC and CSIR, Banking Services Examinations, and so on, to suit the requirements of the job. If a student is honest in his self-evaluation, he will get through the examination, whereas a dishonest one would not make the grade and would be held up. The easiness with which a job seeker clears the test for getting the job would determine the extent of the honesty with which he has acted.

Such a process of 'Self Evaluation-cum-Delinking of Degree from Jobs' will surely help in promoting a society whose younger members—the students—are not only honest but believe in a value-based system. A similar self-assessment for teachers, technocrats, administrators and other professionals may be introduced to motivate honesty, self-confidence, and a sense of responsibility amongst them. However, the *modus operandi* for such a system should be well planned and debated before its introduction. □

TO OUR READERS

Knowledgeable and perceptive as they are, our contributors must not necessarily be allowed to have the last word. It is for you, the readers, to join issues with them. Our columns are as much open to you as to our contributors. Your communications should, however, be brief and to the point.

*Regional Engineering College,
Jalandhar-144 008.

Regional Languages and Higher Education

"Some people contend that higher education, particularly in scientific and technical subjects is better conducted in English because Indian languages do not have the necessary concepts and vocabulary for such subjects. I would like to state that such contentions do injustice to the truth. Far from being unsuitable for scientific and technological purposes, our Indian languages are, in fact, greatly suited for precisely this purpose," asserted Dr. Shanker Dayal Sharma, Vice-President of India. Dr. Sharma was delivering the Convocation Address at the first convocation of the Telugu University. Excerpts

Telugu University is a unique educational institution laying special emphasis on language, literature, arts, history and culture. This is an important aspect in my view—for the real university does not consist of buildings or classrooms or laboratories or libraries—the real university is a state of mind, a body of thought to which all teachers and students belong. A particular emphasis is made on the development of Telugu as a language of modern knowledge and medium of instruction. One of the objectives of the University is of developing the language to cater to every field, keeping in view

item in the national movement. Way back in 1928, he observed in a speech in Gujarat :

"We may give a working knowledge of that (English) Language, but we may not without committing national suicide, neglect the mother tongue... We must enrich it and make it capable of expressing all shades of thought and feeling".

There is a general apprehension that regional languages or mother tongues are not yet fully equipped to meet the challenges of modern times with massive expansion of

Convocation

of future requirements and scientific developments. This reminds me of the imperative need for rendering regional languages as effective media of communication and instruction. It is a fact that right from the days of national movement, there was a constant demand for the enrichment of regional languages as instruments for administrative convenience and educational growth. Mahatma Gandhi made the development of regional languages as a significant

knowledge in all fields, particularly in Science & Technology. I would, however, endorse through my own experience connected with education, that by and large, people are able to express themselves more effectively in their mother tongue, whatever be their knowledge and scholarship in a foreign language. I may recall here what Pandit Jawaharlal Nehru said in 1937 :

"It is axiomatic that the masses can grow educationally and

culturally through the medium of their own languages".

This is the year of Nehru Centenary. We know of Nehru's vision of modern India and the world. He was truly progressive in his outlook and approach. Nehru was a protagonist of development of regional languages as media for higher education. The Official Language Commission, Government of India, in its report categorically declared :

"It is, therefore, a travesty of facts to raise an alarm in connection with the change over the general linguistic medium that this is breaking away from modern scientific progress and is an invocation for the return of the Dark ages to the country."

Some people contend that higher education, particularly in scientific and technical subjects is better conducted in English because Indian languages do not have the necessary concepts and vocabulary for such subjects. I would like to state that such contentions do injustice to the truth. Far from being unsuitable for scientific and technological purposes, our Indian languages are, in fact, greatly suited for precisely this purpose. The Sanskrit language has been recognized by western experts as the ideal medium for computer operations. So far as scientific concepts and vocabulary is concerned, I can say with complete confidence based on actual study by experts that Indian languages are fully equipped and what is more, they are fully receptive and adaptive to new requirements. May I remind you that in Osmania University a very effective initiative had been undertaken to teach all subjects including medicine and physiology in Urdu. The

teaching of scientific and technical subjects in Indian languages would provide two other important benefits : it would reach Science and Technology to the masses and to rural areas where such knowledge can have revolutionary positive effects on the rural economy. It would also boost Research and Development effort.

Suffice it to say that it is high time that we realise the imperative need of educating our college and university students in their own languages. Continuance of English as the medium of instruction at higher levels will be less conducive to proper acquisition of knowledge by the students who could have studied at lower levels in the medium of regional language. This fact was very correctly brought to light by Sri Ramaswamy Ayyar, when he was the Vice-Chancellor of the Annamalai University. He said :

“For instance, the result of the difference in the medium of the instruction in the schools and in the universities is that quite a majority of students coming from the schools find themselves absolutely at sea when they are confronted with lectures and discussions conducted in English”.

When we think of regional languages, the immediate question is, does this concept suit the conditions of India with its multiple language pattern ? Multiplicity of languages is not peculiar to India alone. There are a number of countries in the world like Russia, Belgium, Canada, Switzerland which have two or more languages and have developed modern educational systems.

However it is clear that more care is needed in India. Ours is a

nation with hundreds of dialects spoken by the people of this country, many without the facility of scripts. 15 languages are included in the Eighth Schedule of the Constitution of India. The Central Sahitya Akademy has recognised some more languages for literary purposes.

Every language in India is rich with its literature, with its terminology, with its forms, expressions and idioms. There is also an inner force of Indianness in all the literatures of these languages. There is a remarkable similarity in the scripts of these languages. People of this country have a common heritage and a common bond both emotionally and spiritually, though their languages differ.

I may say here that the development of regional languages need not and should not keep a student away from the national mainstream or from the outside world. It involves acquisition of knowledge by a student in a language other than his mother tongue also. This will enable the students to know the developments in other parts of the country and the world. We must concentrate more on the effective implementation of the three language formula proposed by the National Integration Council in 1962 paying due regard to the status of all the languages listed in the Eighth Schedule of the Constitution of India. It is appropriate that the State of Andhra Pradesh is scrupulously implementing the three language formula and there are eminent Hindi writers in the State. Article 351 of the Constitution of India contains very significant provisions which deal with the enrichment of Hindi language by taking into its fold different forms, expressions and terms from Sanskrit and other Indian languages. English as a language has a certain

undeniable utility for us. I may recall here what Pandit Nehru had said in Parliament :

“I would have English as an alternative language as long as people require it and the decision for that, I would leave, not to the Hindi knowing people, but to the non-Hindi knowing people”.

In the light of the foregoing aspects, I feel that the Telugu University has good reasons for considering introduction of regional language as the medium of instruction at Post-Graduate level. While supporting the view of study in regional language at higher level, I once again advise the students to evince keen interest in mastering a link language.

I am also glad that the Telugu University has introduced courses in Kuchipudi Dance, Carnatic Music, Sculpture and Folk Arts for developing Telugu art and culture.

I would like to refer to a pertinent aspect in this context. My exhortation is mainly for the younger generation. India is a great country with a hoary past. With its Vedas, Sruties, Smrities, Puranas and with its many great and saintly figures, the country is in the forefront in the spiritual leadership of the world.

I may briefly state here the role of youth in pre-Independence era. It was the time when the entire country had the singular objective of securing freedom. People from all walks of life, of all age groups and all vocations, irrespective of their language, region or religion, strove for the liberation of Mother-India from bondage under foreign rule. No amount of sacrifice was considered too great. Students abandoned their colleges, people

with flourishing practices, left their professions. They courted arrests and went to prison. They courageously faced hardship fighting for the great cause of freedom. The country heeded the call of inspiring leaders like Mahatma Gandhi, Pt. Jawaharlal Nehru, Sardar Vallabhbhai Patel, Maulana Azad and others.

The country followed the guiding-light of Mahatma Gandhi. Truth and Non-violence served as powerful values in the minds of millions of patriots. In 1947, we got our Independence. We have our own Constitution to guide the destinies of the Nation. India is a

Democratic Republic and we follow the ideals of Secularism, tolerance and understanding. India's heritage of secular thought and adherence to secularism is a major force of humanism in the world.

Our youth have all opportunities to develop themselves into ideal citizens of the country. But, there is one important requirement. They may be ambitious and they may be intelligent and equally diligent. But, what is the common objective for the youth of today as 'Independence' operated as the goal for their counterparts in pre-Independence era. In my view the goal has to be *service of*

our Motherland. Unless, there is proper awareness of this specific goal and direction, there is every possibility for human effort being distracted and going astray.

Every citizen of India has a role to play in his own way. This is more so in the case of the youth of today to whom the future belongs. There must be a clear direction for them and a specific approach in their service of the country. People of the earlier generation had won freedom by great sacrifices. It is upto this generation to consolidate, amplify and strengthen our freedom and develop independent India into a

CALENDAR OF EVENTS

Proposed Dates of the Event	Title	Objective	Name of the Organising Department	Name of the Organising Secretary/Officer to be Contacted
Dec. 4-7, 1989	International Conference of Engineering Software	To deliberate on the recent advances in the software development and associated computational methods for specific engineering applications	Indian Institute of Technology, Delhi	Prof. C.V. Ramakrishnan, Head, Deptt. of App. Mech. IIT, Delhi, Hauz Khas, New Delhi-110016
Dec. 13-15, 1989	13th National Systems Conference—1989	To bring out the various systems methodologies as applied to Engineering, Industrial Economics, and social problems.	Department of Electrical Engineering, IIT, Kharagpur	Prof. M.K. Ghosh, Department of Electrical Engineering, Indian Institute of Technology, Kharagpur-721302
December 30-31, 1989	9th State level Academic Conference of Maharashtra Federation of College Library Associations	To discuss the theme "Modern Trends in Library and Readers	Maharashtra Federation of College Library Associations, Akola	Mrs. Nirmal Hulbe, Librarian & Convener Ahmednagar College, Ahmednagar.
Jan. 23-25, 1990	Seminar on Woman and Work	To discuss (a) perspectives on women's work and status, (b) women in unorganized and organized sectors, (c) specific issues concerning Scheduled Castes/Tribes Women workers; and role of women's organizations.	Centre for Social Studies, South Gujarat University Campus, SURAT	Dr. Paramjit Singh, Centre for Social Studies, South Gujarat University Campus, SURAT-395-007
April 7-9, 1990	Second Biennial Conference of the Allahabad Mathematical Society.	To promote research in Mathematics, Mathematical Physics and Statistics.	Allahabad Mathematical Society, Allahabad	Professor (Mrs.) P. Srivastava 10. C.S.P. Singh Marg Allahabad

mighty nation. This will be possible only when the people of all walks of life particularly students and the youth work for the unity and integrity of the country, for its all-round development, for the well-being of the people of India and humanity. Only then will freedom have true meaning and purpose.

I feel that institutions of Higher Education have the responsibility of inculcating the right spirit among its students and preparing them on correct lines to serve the nation. These Institutions have the duty of keeping up excellence in academic standards while maintaining a high degree of discipline. These institutions can also think of some more components of community service by students both in urban and rural areas. There are many fields where students of higher learning can involve themselves in promotional activities. It is upto the universities to devise more such schemes so that students get better exposure to the values of social service. It should be remembered that Universities have to produce not only scholars of distinction but more importantly—good human beings with a broad and constructive outlook—young men and women determined to give their best to society and to look upon fellow human beings with the eyes of a friend. मित्रस्य चक्षुषा समीक्षामहे This will also bring the youth of different regions, languages, religions and walks of life together and foster greater unity and affinity. This will help in turning students away from violence or parochial tendencies. The Universities must be centres of unification and galvanization—for the youth of our country in the great cause of nation-building. □

Consensus at the AIU Seminar on “University Finances”

Held at the University of Kashmir
on October 5, 1989

We had published the Consensus in our last issue of University News, 30 October, 1989 in its entirety. Some suggestions made at the seminar, which could not be included in the text, have since been incorporated. These have resulted in rearrangement of the paragraphs such that paras 6, 6.1 and 6.2 are shifted to the end. The paras 7 and 8 are now numbered as 6 and 7. These are followed by para 8 only which has been modified, and is reproduced asunder :

8. Whereas the cost of higher education (comprising salaries, equipment, maintenance etc.) has been increasing geometrically due to galloping inflation, the quantum of fees has generally remained static over the past several decades. Consequently, the universities are largely being funded through state subsidies today, in the shape of grants. This arrangement immediately needs to be reviewed and modified because—

- (i) It leads to the development of an attitude of complete indifference, complacency and irresponsibility on the part of the students and the beneficiaries towards their universities and to the society;
- (ii) It is highly inequitable since it not merely involves net transfer of income from the rest of the community to those enjoying university education, but also that the students who benefit from it do not at any time share the proportionate burden of the cost of such education, even though earnings of those with higher education are decidedly more than that of those without it.
- (iii) It leads to erosion of the autonomy of the universities because of unwanted and stringent financial controls imposed by the state with grants.

8.1. It, therefore, seems to be necessary that the cost of higher education should be appropriately reflected in the fee structure. The deferred payment of the amount so determined should, however, be linked to the attainment of the earning stage by the student.

Detailed modalities and procedures for the same need to be worked out after a national debate.

8.2. It is hoped that through such a system the students would gain the dignity, develop a sense of responsibility and come to realise their obligation to society and to the state.

To be able to attract students despite high fees, the universities will be forced to improve their efficiency and make the optimal use of available resources (Perhaps this already is happening in a few institutions which do not receive any maintenance grant from public funds).

(However, a few participants did not favour the formulation in paras 8, 8.1 and 8.2 above and expressed the view that it is the responsibility of the Government to meet total financial cost of education, and that the benefits of education are really distributed over the community as a whole. They also pleaded that the maintenance grant to the universities should also be shared by the Centre, now that education figures in the concurrent list of the Constitution).

Software to Link Computers Worldwide

necting them through a satellite link to form a wide area network (WAN).

The computer software for local area networks (LAN) developed at the Indian Institute of Technology, Madras, and called the open systems interconnection network (OSINET), is being used to network some departments at the IIT. Dr. S.V. Raghavan, chief investigator of the education and research network (ERNET) project and an assistant professor at the IIT, said that the development of the OSI protocols for linking computers would enable the country to play a leading role in developing software for linking computers throughout the world. The IIT OSINET would also serve as a test bench for research activities in computer software and distributed systems.

The OSINET would enable computers of different architecture and environment to interact with each other without any hitch. Dr. Raghavan said OSINET was aimed at providing import substitution for network software without copyright and licensing problems.

Dr. S. Sampath, chairman of the recruitment and assessment committee of the defence research development organisation and one of two evaluators of the UNDP-sponsored ERNET, said the OSINET software could earn valuable foreign exchange through exports.

Dr. Raghavan said it would cost 1.5 million dollars to equip 300 engineering colleges and universities with imported networking systems. And these would not provide access to technology for further exploitation. Besides saving valuable foreign exchange, an indigenous system would nurture talent and create a challenging work environment.

The operational state-of-the-art network at the IIT includes a 100 node network of personal computers which form the backbone of computer systems such as microvaxes, sun apollo work stations and indigenous systems such as super star and magnum. It also supports a variety of communication protocols. The network development provides E-mail services to the IIT departments, a scientist of the Bharat Electronics in Bangalore was also using the facility.

With the variety of protocols available universally, the unix to unix communication programme (UUNET) of the United States and with MCVAX linking to systems in USA and Europe, it was possible to exchange mail with most of the academic community in both the continents using various networks.

OSINET supports application such as file transfer, file access, remote login and distributed database access besides conforming to the seven-layer ISO specifications for OSI, the institute had developed sublayers such as distributed information management system, asynchronous communication service and distributed application service element (DASE) that provides additional services to a user.

The department of electronics felt there was an urgent need for establishing state-of-the-art communication facilities across premier educational institutions like the IITs. To realise the objective, the department along with seven other academic research institutions set up the education and research network (ERNET) project in 1986 with UNDP funding. The project envisaged local networking in the institute campuses and intercon-

Aryabhata Medal for Dr. Srivastava

The Aryabhata Medal for 1989, instituted by the Indian National Science Academy, has been presented to Prof. P.N. Srivastava, Member, Planning Commission for his outstanding contributions in the field of radiation biology.

Prof. Srivastava, who received the award from INSA president, Prof. M.M. Sharma, delivered a talk on "Cancer and radiation therapy—present status". He said in India about 50 per cent cancers belong to the oral and cervical category and as these can be detected at an early stage they can be cured. Generally one third cancers are preventable, another one third are curable and one third can only be treated with pain relief measures.

In simple terms cancer can be described as uncontrolled multiplication of cells when normal genome gets converted into oncogene. Growth of malignant tumor depends not on just cancer alone but the body's response to it.

About 30 to 50 per cent of all cancers need radiation therapy and since one high dose of radiation is harmful, fractionated doses are given. Efforts have been made to make drugs which could either make the normal cells radio-resistant so that a higher dose of radiation could be given to kill the cancer cells or to sensitise the cancer cells so that they can be killed by a lower dose of radiation.

Dr. Srivastava said many radio-protective and radio-sensitizing drugs have in fact been developed

but they are mostly toxic themselves. Hyperthermia has been developed which can be used with radiation therapy of chemotherapy. In this treatment temperature of tumours is increased to 42 to 43 degrees C which enhances the tumour regression by 25 to 65 per cent depending on the type of cancer.

He said another development has been in the area of immunotherapy and the results are showing promise. Numerous drugs have been developed like lymphokines, cytokines, interferons and interleukins, and now vaccines are being produced which are specially useful in cancers of viral origin.

In the last few years efforts are also being made to develop light-activated drugs that kill cancer cells. This drug is injected which goes both to the normal and cancer cells. After two days the drug is retained only by the cancer cells when a beam of laser activates the drug producing a toxic form of oxygen and killing selectively only the cancer cells, he said.

Seminar on Environmental Protection

The National Service Scheme (NSS), Bhavnagar University, in collaboration with the Gujarat Pollution Control Board, Rajkot and Excel Industries Limited, Bhavnagar, organised a seminar on "Environmental Protection—in our hand" on 12th October, 1989 at the Department of Life Sciences, Bhavnagar University. The objective of the seminar was to generate social consciousness through people's participation in environmental problems. 135 delegates from various colleges and Industries of Gujarat attended the seminar which was spread over three sessions.

Shri K.S. Rathod, Environment Engineer, Government of Gujarat, highlighted the paramount need for environment protection in the interest of human welfare. Shri Kantisen Shroff, Managing-Director of Excel Industries, stressed the need of undertaking proper scientific programmes to generate public awareness to make the area one of the richest regions of the state. Shri D.A. Vaishnav, Registrar, Bhavnagar University, emphasised the need for scientific evaluation of the regional problems for the betterment of the common people of the city.

Dr. B.R. Pandit of Life Sciences Department, discussed the biosphere function and dynamics of many ecosystems, food chain and ecological balance. He stressed the need for urgent steps to undo the damage done by pollution of various kinds.

At the valedictory function Prof. V.C. Shah, Vice-Chancellor of the Bhavnagar University, emphasised the need for development of human resources and natural resources to achieve the ecological balance.

The following recommendations were made at the seminar :

- (1) Formation of Science clubs to inform students about the environmental problems;
- (2) Afforestation of waste lands by NSS volunteers;
- (3) To create awareness about clean drinking water, communicable diseases, conservation of water for agricultural uses;
- (4) To disseminate information about pests, pesticides and insecticides problems;
- (5) To give greater emphasis

on domestic drainage problem in rural areas;

- (6) To undertake weed control programmes;
- (7) To educate the people about the waste disposal and management;
- (8) To create awareness about the pollution problems, plants and allergy;
- (9) To make people conscious about effect of industrial effluents and gas on environment; and
- (10) To work for the interest of human welfare.

Management & Professionalism in Higher Education

Professor Gunvant B. Shah of the South Gujarat University, recently inaugurated a 3-week subject-oriented Refresher Course in Education with the thrust area of "Management and Professionalism in Higher Education and Educational Technology" at the Academic Staff College, Kurukshetra University.

The topics covered in this course include (i) System of Higher Education in India; (ii) Personnel in Higher Education—Teachers and Students; (iii) Instructional Process; (iv) Economic aspects of Higher Education; (v) Management procedures in Higher Education; (vi) Research designs and policy planning in Higher Education; (vii) Systems approach to Education; (viii) Management of learning; (ix) Teaching and training; and (x) Innovations for solving problems.

Resource persons for the course included Professor Sarup Singh, former Vice-Chancellor of University of Delhi; Professor D.A. Dabholkar, former Vice-Chancellor of Poona University;

Dr. M.L. Mehta, Additional Secretary, University Grants Commission; Dr. S.D. Patki, Professor of Media, Technical Teachers' Training Institute, Bhopal; Professor P. Bhai Patel, Dean, Faculty of Education, Gujarat Vidyapith, Ahmedabad; Dr. S.C. Bhatia, Director, Department of Adult, Continuing Education and Extension, University of Delhi; Professor D.B. Desai, Professor of Education, M.S. University of Baroda; Professor Y.L. Grover, Professor in Business Management, S.V.P. National Police Academy, Hyderabad; Dr. V.S. Mahajan, Director, Centre for Indian Development Studies, Chandigarh; Dr. M.G. Augustine of Christian College, Madras; and Dr. T.K.S. Lakshmi of the Department of Education, M.S. University of Baroda.

The Course was organised in the form of lectures-cum-discussions, penal-discussions, brainstorming sessions, workshops, etc. Special sessions were organised on 'Computer Education' and 'Documentation' to make better use of library facilities.

Over 50 university and college teachers from Tamil Nadu, Karnataka, Orissa, Maharashtra, Gujarat, Assam, West Bengal, Madhya Pradesh and Uttar Pradesh attended the course.

Inter-University Moot Court Competition

IXth All India Inter-University Moot Court Competition was organised by the Bar Council of India Trust in collaboration with the Department of Law at Himachal Pradesh University, Shimla on 14-15 October, 1989. Thirty-two universities from all over the country participated in the competition.

The competition was inaugurated by Thakur Kaul Singh, the Hon'ble Law Minister of the Government of Himachal Pradesh. In his address the Minister stressed the need for bringing qualitative improvement in justice system and law education to enable judiciary and the legal profession to meet the rising expectations of the society. He expressed deep concern over the mushroom growth of ill-equipped law colleges producing about 22,000 law graduates every year. While pointing out the incompetence and misconduct which have brought a bad name to the profession he urged the Bar Council of India, State Bar and the law colleges to work jointly in evolving a programme in teaching law practice, practice management and professional values. He suggested that such moot court competitions be held on a regular basis to provide necessary practice skills to the law students.

Prof. K.C. Malhotra, Vice-Chancellor of the Himachal Pradesh University, while welcoming the chief guest and the participants appealed to the young lawyers to make serious efforts in order to reach justice to the poorer and the disadvantaged sections of the society which have been denied the benefit of the present justice delivery system even after four decades of independence.

Shri B.N. Sharma, the Associate Managing Trustee of the Bar Council of India Trust, speaking on the occasion revealed that the Bar Council of India Trust is developing various schemes in order to provide training in the basic skills of advocacy to the students and to the junior advocates.

In the first round of the competition sixteen courts were

organised which were presided over by the judges and the senior advocates. After the competition, on the basis of merit, fourteen teams were selected for the second round. The Universities which competed for the second round were National Law School University, H.P. University, Madras University, Delhi University, Bombay University, G.N.D. University, Shivaji University, Gujarat University, M.D. University, Poona University, Mahatma Gandhi University, Kerala University, Bangalore University and Burdwan University.

In the second round Bombay University, National Law School University, Kerala University and H.P. University qualified for the semi-finals.

In the semi-finals each court was presided over by three judges. On the basis of merit two teams were selected for the finals. Bombay University and National Law School, Bangalore made to the finals of the competition.

The finals court was presided over by seven judges. Bombay University represented by Dhananjay Joshi and Mehernosh Pardiwala was declared the winners. Dayan Krishnan and Nandan S. Nelivigi of National Law School University, Bangalore bagged the runners up position.

Hon'ble Mr. Justice H.S. Thakur, former Judge of the Himachal Pradesh High Court and the Chairman of the Administrative Services Tribunal, was the chief guest at the validictory function. He also gave away the prizes to the winners. Prof. K.C. Malhotra, Vice-Chancellor, who delivered the validictory address, emphasised the need for extensive training for

the law students in basic practice skills. He said that access to justice has many facets and, therefore, the role of improved lawyer competence in assuring easy access to justice system cannot be over emphasised. Today in India lawyer competency has become such an obvious issue that unless urgently tackled in an effective manner all our efforts at system reform would remain incomplete.

Speaking on the occasion, Dr. I.P. Massey, Professor and Chairman of the Department of Law of H.P. University, said that for developing basic practice skills, the Bar Council of India should take a lead in collaboration with the law schools and state bar councils in developing and conducting basic skills training programmes. It is against this background that this All India Inter-University Moot Court Competition which is organised annually is a very welcome programme. However, such programmes should not only be an annual affair but something on a continuous basis should be designed so that our young lawyers may develop necessary practice competence.

He, therefore, called upon the Bar Council of India, State Bar Associations and the Law Schools to work jointly in devising a programme for practice competence. He suggested that such programmes may include :

- (1) Identification of the basic skills necessary to be achieved in important specialized areas of practice i.e. criminal, civil, family, business and tax, etc. and working out mechanisms to teach these skills;
- (2) Identification of programmes for teaching law practice management and professional values;

- (3) Preparation of practice manuals needed by practioners in all the basic practice areas to keep them abreast of current developments in law;
- (4) Ensuring continuous financial and academic support to these skill training programmes; and
- (5) Establishment of specialized centres of trial and appellate advocacy.

Central Assistance to Cochin University

A development grant of Rs. 53 lakhs has been granted to the Cochin University of Science and Technology by the Ministry of Human Resource Development, Government of India. Out of this the University Department of Electronics gets Rs. 15 lakhs for modernisation of antenna laboratory and Rs. 10 lakhs for the instrumentation laboratory. The School of Technology and Central Library will get Rs. 10 lakhs each while the Meteorology Division

gets Rs. 8 lakhs.

SERC Dissemination Service

Department of Science & Technology (DST) is promoting research in frontline and emerging areas through the Science & Engineering Research Council (SERC). Recently, DST has initiated a Dissemination Service, encouraging DST staff members on official business to give orientation about SERC funding opportunities at all educational and academic institutions, particularly those where there is a very little activity and are not recipients of SERC funds. These would include Universities, Colleges, at remote places.

Interested Institutions/Scientists may contact, Shri V. Rao Aiyagari, Director and Head, SERC Secretariat, Department of Science & Technology, Technology Bhavan, New Mehrauli Road, New Delhi-110016.

News from Agril. Varsities

National Scheme for Hybrid Crops

The Indian Council of Agricultural Research (ICAR) has initiated a "National Scheme" for hybrid production of various crops, including sorghum. Superior rabi hybrids were expected to result from this scheme. This was revealed by Dr. N.S. Randhawa, Director General, ICAR while speaking at the "Farmers Field Programme" organised by the "National Research Center for Sorghum" in Hyderabad recently. He said pests, diseases, drought and quality traits, acted as constraints for further spread area in Sorghum

crop. The "National Research Centre" for Sorghum would strive to improve the quality and quantity of grain and fodder, and their better utilisation in future, he added.

Dr. Randhawa said it had been demonstrated that a major portion of shortage of pulses and edible oilseeds could be met from the current Sorghum cultivating areas with inter-cropping. However, lack of attractive procurement price, non-preference for the coarse cereals for human feed, ready availability of finer cereals

like wheat and rice, made "Sorghum" less preferable to crops like groundnut sunflower, castor and pulses.

Dr. R.S. Paroda, Deputy Director General of ICAR said the "National Research Center" for Sorghum would carry out research to increase spread of hybrids and varieties by removing the existing constraints, mainly with a view to meet the demand for 25 million tons of coarse grains by the turn of the century.

Dr. U.R. Murthy, Director of the National Research Center for Sorghum, said with improved research facilities in the "National Research Center," the current per hectare yield of 800 kgs, in the country could be stepped upto 1800 kgs.

Pesticide Residue Analysis

The Konkan Krishi Vidyapeeth, Dapoli in collaboration with the Indian Society for Environmental Science & Technology, Bombay organized a Refresher Course on Pesticide Residue Analysis at Dapoli from 11th October to 13th October, 1989. During the training programme, emphasis was laid on the T.L.C. and the G.L.C. techniques in pesticide residue analysis.

Inaugurated by Dr. S.B. Kadrekar, Vice-Chancellor, Konkan Krishi Vidyapeeth, the course was attended by the members of staff concerned with pesticide residue analysis work from the four Agricultural Universities in Maharashtra.

22.11.89

"C.B.R. Test"
"Preserving a Priceless Legacy"
"Modern Genetics and Human Welfare—IV"

23.11.89

"Computer Quiz"
"An End to Pounding"
"Literature and Language—II"

2nd Transmission

4.00 p.m. to 5.00 p.m.

16.11.89

"Pulse Circuits—II"
"Secrets of Greenland Ice"
"The Human Seasons—John Keats"

17.11.89

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"Electron Microscope—An Introduction"

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RESEARCH IN PROGRESS

A list of Research Scholars registered for Doctoral Degrees of Indian Universities

SOCIAL SCIENCES

Psychology

1. Premlal, T.D. *Psycho-social adjustments of family members of alcoholics*. Kerala. Dr. R. Sreedevi Ammal, TC 37/2229-1, West Fort Road, Trivandrum.

Sociology

1. Dilip, K.G. *The beliefs and myths of a Kerala Tribe : A study of the Paniyans of Wynad*. Kerala. Dr. Manu Bhaskar, Lecturer, Department of Sociology, University of Kerala, Kariavattom.
2. Renjini D. *The disintegration of matrilineal system and the changing status of Nayar Women*. Kerala. Dr. E.J. Thomas, Principal, Loyola College, Trivandrum.
3. Sudhakarishnan. *Migration and social change*. Kerala. Dr. G. Ramachandra Raj, Prof., Department of Sociology, University of Kerala, Kariavattom.

Social Anthropology

1. Gupta, Rajendra Kumar. *Demography and population dynamics*. Delhi. Dr. A.K. Kapoor, Department of Anthropology, University of Delhi, Delhi.
2. Paul, Sushmita. *Trends and differentials demography in fertility and family planning among population groups of Uttar Pradesh, Himalaya*. Delhi. Dr. M.K. Bhasin, Department of Anthropology, University of Delhi, Delhi.

Political Science

1. Jayaraman, Vinodini. *Administration of Laws on Narcotics and Psychotropic Substances*. Kerala. Dr. K. Raman Pillai, Prof. and Head (Retd.), Department of Politics, University of Kerala, Kariavattom.

Economics

1. Nagarajan Naidu, V. *Micro-level planning and development in Kerala*. Kerala. Dr. K. Ramachandran Nair, Prof., Department of Economics, University of Kerala, Kariavattom.

Education

1. Abraham Thomas M. *A study of certain affective correlates of achievement of students in vocational higher secondary schools of Kerala*. Kerala. Dr. K.N. Lalithamma, Prof., Department of Education, University of Kerala, Trivandrum.
2. Ravindran, G. *History and development of higher education in Kerala*. Kerala. Dr. A. Sukumaran Nair, Pro-Vice-Chancellor, University of Kerala, Trivandrum.
3. Skariah, Sunny. *A study of creativity in student teachers in relation to their self concept, attitude towards teaching and success in teaching*. Kerala. Dr. K.N. Lalithamma, Prof., Department of Education, University of Kerala, Trivandrum.
4. Husain, Munira. *Dietetic management of malnutrition in relation to development of pre-school children*. Devi Ahilya.

Dr. (Smt.) K. Sharma, Department of Home Science, Govt. New Girls Degree College, Indore and Dr. S.D. Singh, Prof. and Head, Department of Paediatrics, MGM Medical College, Indore.

HUMANITIES

Fine Arts

Music

1. Narasimha Moorthy, Muthuswami. *Musical forms: A historical perspective*. Kerala. Dr. (Mrs.) Gowrikuppuswami, 658, Double Road, Kuvempu Nagar, Mysore.

2. Sumana Devi, K. *The incidental songs of great composers of South India*. Kerala. Dr. (Mrs.) B. Pushpa, Prof., Department of Music, Govt. College for Women, Trivandrum.

Language & Literature

English

1. Charanjit Singh. *Love marriage and death in Saul Bellow's novels*. Panjab. Dr. Shelley Walia, Reader, Department of English, Panjab University, Chandigarh.

Sanskrit

1. Dwivedi, Sitaram. *Vishveshwar Panday krit Ramchandrika ka kavya shastriya adhyayan*. HS Gour. Dr. Kusum Bhuriya, Reader, Department of Sanskrit, Dr. Harisingh Gour Vishwavidyalaya, Sagar.

2. Jain, Vijay Lakshmi. *Jain Katha sahitya mein nari*. HS Gour. Dr. Bal Shastri, Reader, Department of Sanskrit, Dr. Harisingh Gour Vishwavidyalaya, Sagar.

3. Madhavan Pillai, V. *A critical edition of abhinavaguptas Locanam commentary for Dhwanyaloka of Ananda Vardana*. Kerala. Dr. K. Maheswaran Nair, Lecturer, Department of Sanskrit, University of Kerala, Kariavattom.

4. Trivedi, Archana. *Ullaghraghav natak ka natya shastriya adhyayan*. HS Gour. Dr. Kusum Bhuriya, Reader, Department of Sanskrit, Dr. Harisingh Gour Vishwavidyalaya, Sagar.

Bengali

1. Majumdar, Rekha. *Bankimchandra O Saratchandrer upanyaser kayekti prasanger tulanamulak alochana*. BHU. Dr. S.N. Das, Department of Bengali, Banaras Hindu University, Varanasi.

Arabic

1. Hood Ahmad. *Abdul Aziz Al-Memani's life and works*. BHU. Dr. (Smt.) Naseema Farooqui, Reader, Department of Arabic, Banaras Hindu University, Varanasi.

Malayalam

1. Varma, E.N. Kerala. *Attakkatha and its stage presentation: An assessment with special reference to Nalacharitham*. Kerala. Prof. V.S. Sharma, Department of Malayalam, University of Kerala, Trivandrum

History

1. Goel, Shiv Kumar. *Theory and practice in industrial relations in Gandhism: A case study of Textile Labour Association*. HP. Dr. S.K. Gupta, Department of History, Directorate of Correspondence Courses, Himachal Pradesh University, Shimla.

2. Sharafudeen, S. *The resurgence among the Muslims of Kerala, 1900-1980*. Kerala. Dr. K.K. Kusuman, Reader, Department of History, University of Kerala, Kariavattom.

3. Singh, Achala Pal. *A study of political relations of Himachal Chiefs with Muslims, Sikhs and Gurkhas, 1206-1846*. H.P. Dr. M.S. Ahluwalia, Department of History, Himachal Pradesh University, Shimla.

4. Srivastava, Rekha. *The history and archaeology of District Ghazipur, 600 B.C. to 600 A.D.* BHU. Prof. (Mrs.) K.K. Gopal, Department of Ancient Indian History, Culture and Archaeology, Banaras Hindu University, Varanasi.

5. Tuli, Renu. *Urbanization in early mediaeval India, Circa AD 750-1200*. HP. Dr. L.P. Pandey, Department of History, Himachal Pradesh University, Shimla.

THESES OF THE MONTH

A List of Doctoral Theses Accepted by Indian Universities

SOCIAL SCIENCES

Library & Information Science

1. Ramesh Babu, B. *A study of the characteristics of indexes in philosophical books with reference to standards on indexing*. Madras. Dr. P. Gangadhara Rao, Prof., Institute of Correspondence Education, University of Madras, Madras.

Psychology

1. Dey, Madhumita. *A psycho-social study of frustration*.

Nagpur. Dr. R.D. Halode, Reader, Department of Psychology, Ravishankar University, Raipur.

2. Dwivedi, Mamta. *Some studies on every day memories*. Barkatullah. Dr. Grishwar Mishra, Head, Department of Psychology, Barkatullah Vishwavidyalaya, Bhopal.

3. Fuljeet Kaur. *Adolescents loneliness, correlates, attributions and coping*. Panjab.

4. Jameela Khatoon. *Personality patterns of high and low academic achievers: A psychological study of adolescents of Rohilkhand Region, U.P., India*. Rohilkhand. Dr. A.D. Tripathi, Govt. Raza PG College, Rampur.

5. Mammen, M. *Intrinsic motivation and academic per-*

formance. Barkatullah. Dr. Grishwar Mishra, Head, Department of Psychology, Barkatullah Vishwavidyalaya, Bhopal.

6. Sawade, Suhasini Dattatraya. *Verbal maze learning : Its cognitive and personality determiners*. Nagpur. Dr. R.D. Helode, Reader, Department of Psychology, Ravishankar University, Raipur.

7. Sharma, Arvind Kumar. *Audyogik shramikon ke vibhinn mulyon ka manovaigyanik adhyayan*. Rohilkhand. Dr. R.K. Ojha, K.G.K. College, Moradabad.

8. Tejinder Kaur. *Need achievement : A social audit*. Panjab.

9. Vohra, Roopa. *Job involvement as a function of role stress, anxiety and locus of control among employed housewives*. Delhi.

Sociology

1. Agarwal, Neelam. *Rohilkhand Kshetra ke pujariyon ka samajshastriya adhyayan*. Rohilkhand. Dr. M.C. Sondhi, Bareilly College, Bareilly.

2. Barodiya, Hari Krishna. *Vidisha Jile mein Muslim sampradaya ka parivar niyojan ke prati drishtikon : Ek samajvadi adhyayan*. Barkatullah. Dr. R.M. Solanki, Department of Sociology, Hamidia College, Bhopal.

3. Chaurasia, Kshama. *Child labour in indigenous industries in Moradabad : A socio-economic analysis*. Rohilkhand. Dr. (Smt.) S.P. Jain, Hindu College, Moradabad.

4. Indra Kumari. *Uttar Pradesh ke Eta Janpad ke vikaskhandaon mein gram vikaskaryakramon ka gramheen mahilaon ke star evam bhumikaon per prabhav*. Rohilkhand. Dr. R.N. Mukherjee, Bareilly College, Bareilly.

5. Narayana Chetty, Y. *The role of trade unions in a changing society*. Bangalore. Dr. S. Rajagopalan, Prof. and Head, Department of Sociology, Jnana Bharathi Campus, Bangalore University, Bangalore.

6. Rai, Bishwanath. *A sociological study of socio-economic condition of the labourers employed in the cottage industries of Varanasi*. Rohilkhand. Dr. (Smt.) S.P. Jain, Hindu College, Moradabad.

7. Sabharwal, Rita. *Socio cultural aspects of army personnel : A study of culture group*. Rohilkhand. Dr. J.K. Misra, Hindu College, Moradabad.

8. Shrimali, Mamta. *Bhopal Nagar ke madhyavargiya parivaron mein karyaait mahilaon kee bhoomika va sthiti mein parivartan ka samaj shastriya adhyayan*. Barkatullah. Dr. I.S. Chauhan, Head, Department of Sociology, Barkatullah Vishwavidyalaya, Bhopal.

Social Anthropology

1. Hiremath, Virupaayya Channallayya. *Hindu Muslim religious synthesis in Raja Bag Surya Temple of Yamanur*. Karnatak. Dr. N.K. Kadefotud, Reader, Department of Studies in Anthropology, Karnatak University, Dharwad.

Political Science

1. Kalita, Bhagirath. *A study of the Assam Tribune since*

1939, Gauhati. Dr. V. Venkata Rao, Prof. Emeritus, Gauhati University, Guwahati.

2. Kulkarni, S. *Appraisal policy and practices in Armed Forces*. Osmania.

3. Pande, Savita. *Nuclear non-proliferation and Pakistan*. JNU. Prof. S.D. Muni, and Dr. Kalim Bahadur, Centre for South, Central and Southeast Asian and South West Pacific Studies, Jawaharlal Nehru University, New Delhi.

4. Saxena, Chandrakanta. *Bharat Heavy Electricals Audyogik Sansthan : Bhopal ikai mein shramik sangathan evam kalyankari vyavastha*. Barkatullah. Dr. G.P. Kashiv, Asstt. Prof., Department of Political Science, Govt. Hamidia College, Bhopal.

5. Shrivastava, Jyoti. *China-America sambandh, 1969-79*. Barkatullah. Late Prof. N.A. Khan Nausha.

6. Singh, Jagdish Prasad. *Air transport in India : A study in management based on Indian Air Lines, Air India and Vayudoot*. Magadh. Dr. K.P. Singh, Department of Public Administration, Magadh University, Bodh Gaya.

Economics

1. Adeli, Seyed Mohammad Hossein. *Foreign trade of Iran : Structure, policy and balance*. Jamia. Prof. M. Rahmet Ali, Department of Economics, Jamia Millia Islamia, New Delhi.

2. Bansal, Vibha. *Role of nationalised banks in economic development of weaker sections of Moradabad District*. Rohilkhand. Dr. B.N. Chaurasia, Hindu College, Moradabad.

3. Basu, Partha. *Working capital requirements for the cultivation of major agricultural crops in West Bengal*. Calcutta.

4. Chaudhry, Kalpna. *Bharatiya videshi vyapar ke swarup mein panchavarshiya yojnakal mein huye parivartan*. Rohilkhand. Dr. D.V.S. Jauhri, Bareilly College, Bareilly.

5. Choubey, Narmada Prasad. *Madhya Pradesh ke sehkari adhikoshon kee karya pragati ka mulyankan evam unka anshdan : Durbal varg ke arthik utthan ke vishesh sandarbh mein*. Barkatullah. Late Dr. B.S. Tripathi.

6. Choudary, V.S.N. *A study of role of agro industries in the developing region of East and West Godavari districts of A.P.* Barkatullah. Dr. P.C. Jain, Department of Applied Economics and Business Management, SSL Jain College, Vidisha.

7. Gundal Reddy, B. *Growth and development of agriculture in Rayalseema, 1956-1981*. Osmania.

8. Jain, Anita. *Madhya Pradesh ke Sagar Sambhag mein audyogikaran evam pramukh udyog : Ek arthik vivechana*. HS Gour. Dr. O.P. Mishra, Prof. and Head, Department of Commerce, Govt. Post Graduate College, Bina, Distt. Sagar.

9. Mitra, Nilanjana. *An econometric study of some aspects of the Indian tea industry*. Calcutta.

10. Pandu, Chiprikar Bapu. *A study of grape growers of Sangli District with special reference to the transfer of grape technology.* MP Krishi. Dr. T.S. Khuspe, Chief Technical Officer (Agriculture), State Bank of India, Agricultural Banking Department, Bombay.

11. Paul, P.P. *An economic analysis of various irrigation sources in Western Uttar Pradesh.* Roorkee.

12. Phalke, Uttamrao Jotirao. *A case study on impact of Shetkari Sahakari Shakhar Karkhane Ltd. Sangli, Maharashtra on socio economic life of member farmers.* MP. Krishi. Dr. T.S. Khuspe, Chief Technical Officer (Agrl.), State Bank of India, Agricultural Banking Department, Bombay.

13. Rohatgi, Eva. *Analysis of the finances of Indian Railways since 1951.* Rohilkhand. Dr. S.P. Gupta, Bareilly College, Bareilly.

14. Surinder Kaur. *Population pressure, size distribution of land productivity : An analysis of inter-regional and intra-regional disparities, a case study of Maharashtra State.* Nagpur. Dr. (Mrs.) Anjali Kulkarni, Department of Economics, Nagpur University, Nagpur.

15. Tiwari, Rakesh. *Madhya Pradesh mein Municipal Nigamon ke vittiya stroton mein vridhi ke upay : Jabalpur evam Katani nigamon ke vishesh sandarbh mein.* Durgawati. Dr. Vinod Audholia, D.N. College, Jabalpur.

Law

1. Jaiswal, Paramjit Singh. *Directive Principles Jurisprudence and socio-economic justice in India.* Panjab.

Public Administration

1. Kohli, Usha. *Organisation and working of voluntary agencies for women welfare : A study of select agencies in the Punjab.* Panjab.

Military Studies

1. Chauhan, Jitendra Singh. *Samrik evam rajneetik drishti se Jammu-Kashmir ka adhyayan san 1947 se ab tak.* Rohilkhand. Dr. B.K. Tandon, Bareilly College, Bareilly.

Education

1. Bharsakle, Surendra Bhagirath. *Self-image and motivation as related to socio-economic status of scheduled castes and non-scheduled castes college students.* Durgawati. Dr. R.P. Shrivastava, 1286, Jaiprakash Nagar, Adhartal, Jabalpur.

2. Mahajan, Ram Krishan. *Analytical study of sports facilities and programme of physical education in the schools of Nepal.* Nagpur. Dr. V.A. Vaidya, H.V.P. Mandals, Department of Research, Degree College of Physical Education, Amravati.

3. Rathod, Keshavlal Vallabhdas. *A critical study of the present position of teaching science in the secondary schools of Gujarat State.* Patel. Dr. D.S. Surve,

Lecturer, M.B. Patel College of Education, Vallabh Vidyanagar.

4. Shan, Hans Raj. *Effectiveness of certain curricular activities in the development of creative thinking of high school students of backward hilly region of Jammu.* HP.

5. Sundaram, Joseph. *A comparative study of the social and psychological characteristics of the first generation and traditional learners.* Barkatullah. Dr. S.C. Pant, Department of Education, Regional College of Education, Bhopal.

Commerce

1. Biswasroy, Prasanna Kumar. *Revival of sick industrial units : A study on the role of IRCI.* Berhampur. Prof. P.K. Sahu, Head, Department of Commerce, Berhampur University, Berhampur.

2. Gopalakrishna Pillai, S. *A job oriented training model for development of vocational skills.* Calicut. Dr. C.N. Purushothaman Nair, Prof., Department of Commerce, University of Kerala, Kariavattom.

3. Jain, Nilesch Kumar. *Working of industrial estates in Ghaziabad since 1975.* Rohilkhand. Dr. S.P. Gupta, Bareilly College, Bareilly.

4. Khan, Israr Hassan. *Bihar State Road Transport Corporation : Problems and prospects.* Magadh,

5. Krishna Reddy, B. *Financial management in cotton textile mills in Andhra Pradesh.* Venkateswara. Dr. K. Seshaiyah, Department of Commerce, Sri Venkateswara University College, Tirupati.

6. Mehrotra, Sanjeev. *Role of Exim Bank in India's foreign trade.* Rohilkhand. Dr. Naresh Kumar, Hindu College, Moradabad.

7. Nair, Renuka. *Madhya Pradesh Rajya Sehkari Bhoomi Vikas Bank : Karya evam uplabdhiyon ka mulyankan.* Barkatullah. Dr. L.M. Malviya, Prof., Department of Commerce, Guru Ghasidas University, Bilaspur.

8. Narendra Swaroop, *Analysis of financial trends of iron and steel industry in public sector of India.* Rohilkhand. Dr. D.K. Verma, S.M. College, Chandausi.

9. Palaha, Satinder. *Cost of capital and corporate policy with special reference to the influence of changes in accounting variables in stock prices.* Delhi.

10. Patel, Rewa Ram. *Bharat mein akhbari kagaj udyog evam Nepa Mills ka vishesh adhyayan.* HS Gour. Dr. S.P. Johri, Principal, Government College, Timarni, Distt. Hoshangabad.

Management

1. Seth, Pramila. *Profile of personnel policies and practices of selected industrial units.* Osmania.

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Status
Address

I hereby declare that the entries in this form and the additional particulars, if any, furnished in reply to the questions above are true to the best of my knowledge and belief.

I also declare that in case I am selected for the scholarship applied for, I shall devote my full time to the approved course of study/research and that I shall not undertake or carry on any other paid work, or receive another scholarship or any other grant from any other source during the tenure of this scholarship.

I further declare that I was never a scholar under the Govt. of India Scheme.

Place :
Date :

Signature of the Candidate
davp 89/769

REGIONAL ENGINEERING COLLEGE

ROURKELA-769008 (ORISSA)

Advertisement No. 3/89

Dated : 21.10.89

Applications in prescribed form are invited for the following Faculty positions :

I. Professors : Scale Rs. 1500-60-1800-100-2000-125/2-2500/- (Likely to be revised). (Plus allowances).

Computer Science Engineering and Application (Management); Electrical Engineering (Machines/Power System/Control System/Power Electronics and Drives); Mathematics, (Elasticity / Topology / Operation Research / Fluid Dynamics); Chemistry (Inorganic/Physical).

II. Assistant Professors : Scale Rs. 1200-50-1300-60-1900/- (Likely to be revised), (Plus allowances)

Applied Electronics and Instrumentation Engineering (Electronics/Instrumentation); Computer Science, Engineering and Application (Computer Science/Computer Engineering); Chemical Engineering (Process Dynamics, Control and Instrumentation/Reaction Engineering/Fluid and Particle Mechanics); Elect. Engineering (any specialisation of Electrical Engg.); Humanities (English).

III. Lecturers : Scale Rs. 700-40-1100-50-1600/- (Likely to be revised), (Plus allowances)

Chemical Engg., Civil Engg., Electrical Engg., Mechanical Engg., Mining Engg., (Any specialisation in corresponding discipline); Computer Science, Engineering and Application; (Computer Science / Computer Engineering/Computer Application).

Qualification and Experience

U.G.C./A.I.C.T.E. norms of qualification and experience as of University level Post Graduate Engineering College Standard. Preference will be given to SC/ST/Physically Handicapped candidates who are otherwise considered qualified. Candidates abroad may apply on plain paper giving full bio-data. For posts of Lecturers, first class degree holders in relevant branches of Engineering may also be considered who have to procure Master's Degree within 5 years.

Total monthly emoluments at the starting point as at present are : Professors : Rs. 3973-00; Assistant Professors : Rs. 3514-00, Lecturers : Rs. 2291-00. Higher initial pay in the scale is admissible to deserving candidates.

Further details regarding qualifications, experiences specialisations, service conditions etc. prescribed for the posts and application forms will be available from the undersigned on payment of Rs. 15/- in shape of Crossed Bank Draft payable to "Principal, Regional Engineering College, Rourkela-769008", at the State Bank of India, R.E. College Campus Branch enclosing a self-addressed envelope 23 x 10 cm. in size, with postage stamp worth Rs. 1.80. Separate applications should be made if candidates apply for more than one post. The last date of receiving complete applications is 30.11.89.

N.C. Mohanty
REGISTRAR

OFFICE OF THE REGISTRAR GAUHATI UNIVERSITY GUWAHATI-14

ESTABLISHMENT BRANCH
Advertisement No. 11 of 1989

Applications in the Standard Form prescribed below are invited from eligible candidates and will be received upto 20.11.89, for the following 7th Plan posts.

1. Professor of Computer Science : One post

Specialisation : Open

2. Professor of Linguistics : One post

Specialisation :
Structural or Firthian or Systemic or Transformational Generative. Persons specialising in Sociolinguistics can also apply. Persons Specialising in Diachronic Linguistic need not apply.

3. Reader in Applied Botany & Biotechnology : One post

Specialisation : —M.Tech/M.Sc. Agri / M.Sc. in Botany / Agri Botany in plant Biochemistry/Genetics / Microbiology with a doctorate degree and five years teaching experience in post graduate classes.

Desirable — Specialisation in Enzymology / Molecular genetics/Genetics Engineering/Immunology.

4. Reader in Law (for Deptt. of Law) (LL.M. classes) : One post

Specialisation : Open

5. Lecturer in Assamese : One post

Specialisation : M.A. in Linguistics with a specialisation in Tibeto-Burman Linguistics. Preference will be given to those having knowledge of structure of Bodo or Karbi or Mishing.

6. Lecturer in Education : One post

Specialisation : Open

7. Lecturer in Sanskrit : One post

Specialisation : Open

8. Lecturer in Geography : One post

Specialisation : Candidate should have research experience in Geomorphology with Cartography and Remote Sensing background.

9. Lecturer in Mathematics : One post

Specialisation : Applied Mathematics

10. Lecturer in Arabic : One post

Specialisation : Open

11. Lecturer in Chemistry : One post

Specialisation : (1) Organic (2) Inorganic Or (3) Physical Chemistry

12. Lecturer in English : One post

Specialisation : Open

13. Lecturer in Applied Botany & Biotechnology : One post

Specialisation : M.Sc./M.Sc. (Agri)/M.Sc. (Agri-Botany/ in Microbiology/Plant Pathology/Agri Botany/Botany,

Desirable—Specialisation in Plant Virology/Plant Bacteriology/Fungal Systematics, Persons with Ph.D. degree and teaching experience will be preferred.

14. Lecturer in Law : One post
(For Deptt. of Law),
(LLM. Classes),

Specialisation : Open

Scales of Pay

1. Professor : Rs. 4500-150-5700-200
7300/-

2. Reader : Rs. 3700-125-4950-150-
5700/-

3. Lecturer : Rs. 2200-75 2800-100-
4000/-

Essential Qualifications

Professor : An eminent scholar with published work of high quality actively engaged in research. Ten years' experience of teaching and/or research. Experience of guiding research at Doctoral level.

Or

An outstanding scholar with established reputation who has made significant contribution to knowledge.

Reader : Good Academic record with a doctoral degree or equivalent published work. Evidence of being actively engaged in (i) research or (ii) innovation in teaching methods or (iii) production of teaching materials. About five years experience of teaching and or research provided that atleast three of these years were as Lecturer or in an equivalent position. This condition may be relaxed in the case of candidates with outstanding research work.

Lecturer : (a) A Doctorate degree or research work of an equally high standard, and (b) Master's Degree with good academic record with atleast 55% marks or its equivalent grade in the subject from an Indian University or an equivalent degree from a foreign University. Having regard to the need for developing inter disciplinary pro-

grammes, the degrees in (a) and (b) above may be in relevant subject.

Provided further that if a candidate possessing a Doctorate degree or equivalent research work is not available or is not considered suitable, a person possessing a good academic record with atleast 55% marks and its equivalent grade at the Master's degree level (weightage being given to M. Phil or equivalent degree or research work of quality) may be appointed provided he/she has done research work for atleast two years or has practical experience in research Laboratory/Organisation on the condition that he/she will have to obtain a Doctorate degree or give evidence of research of high standard within a reasonable time. UGC norms shall be applicable in all cases of appointment and career advancement.

Qualification for Lecturer of Law (for LL.M. Classes) :

"Master's degree in Law with at least 55% marks or its equivalent grade from an Indian University or an equivalent degree from a foreign University.

Candidates should have a good academic record with a doctorate degree or research work of an equally high standard".

PROCEDURE OF SUBMISSION OF APPLICATIONS

Applications in prescribed Form mentioned below in 7 (seven) copies together with an application fee of Rs 20/- (Rupees twenty) and Rs. 10/- (Rupees ten) in case of Scheduled Caste/ Scheduled Tribe candidate only by "CROSSED INDIAN POSTAL ORDERS" drawn in favour of the Registrar, Gauhati University payable at Gauhati-781014 post office should be sent in an inner sealed cover super-scribed application for post of (Name of the post applied for with Sl. No.) Advertisement No. 11 of 1989 enclosed in an outer cover addressed to the

Registrar, Gauhati University, Guwahati-14.

LAST DATE OF RECEIPT OF APPLICATIONS

Applications will be received upto 20.11.89 only. Applications received after the last date of submission and not submitted in prescribed form as given below in 7 (seven) copies will not be entertained. Copies of certificates and Marksheets must be attached with each copy of application.

No. of this advertisement and name of the post alongwith the serial No. of post must be referred to in the application.

Persons in employment should apply with a no objection certificate from the present employer.

INTERVIEW

Candidates will be required to appear at an interview if and when called for at their own cost.

Canvassing directly or indirectly will be a disqualification.

D.C. Baroowa
REGISTRAR

PREScribed FORM FOR APPLICATIONS

1. Advertisement No. :
2. Serial No. of the post in the Advertisement :
3. Name of the post applied for :
4. Name of the applicant in full (in block letters) :
5. Father's name in full :
6. Home Address in full :
7. Present address for communication :
8. Date of birth by Christian era :
9. Age on the date of application :
10. Nationality :
11. Community (Scheduled Caste/ Tribes) :
12. Educational Qualification :

Examination Passed	Name of Board/ University	Yr. of passing	Div./Class	P.C. of Marks	Rank if any.
H.S.L.C H.S / P U. B.A./B.Sc./B.Com./LL.B. M.A./M.Sc./M.Com./MBA/LL.M. M.Phil/M. Litt. Ph.D./D.Litt.					

Specialisation in M.A., M.Sc., M.Com., Degree :
Title of the Ph.D. Dissertation
N.B. : Attested copies of Marksheets and Certificates of all examinations passed should be enclosed with all seven copies of applications.

13. Past experience if any (give details) :
14. Research Publications (Give details in separate sheets of papers) :
15. Present Occupation if any :
16. Name of employer, (if employed) :
17. Basic pay drawn :

18. Name of two referees (not related to candidate) :

I beg to certify that the particulars furnished above are true in all respects. I shall be liable to action at any time if found otherwise.

Signature of the applicant
Date :